



The Applicant for Reissue believes the following to be material to the examination of the application.

INFORMATION DISCLOSURE STATEMENT accompanying application for Reissue of Patent No. 5,045,704, issued Sept. 3, 1991 to Vincent J. Coates for "Method for Determining Absolute Reflectance of a Material in the Ultraviolet Range"

1. Pat. 3,751,643 Issued 1973 to Dill et al: Cl 235/151.32
2. Pat. 4,899,055 Issued 2/6/90 to Adams: Cl 250/372 (filed 1988)
3. Pat. 5,101,111 Issued 1992 to Kondo: Cl 250/560 (filed July 1990: based on 2 Japanese applications filed 7/13/89)
4. Pat. 5,120,966 Issued 1992 to Kondo: Cl 250/372 (filed Feb. 1991: based on Japanese application filed 7/12/88)
5. Book by Dr. Horst Piller, Microscope Photometry, published by Springer-Verlag Berlin Heidelberg (1977), Chapter 9



1. 3,751,645 teaches that Absolute Reflectance may be computed by the ~~reduction~~ of relative reflectance data with a computer program. The patent is limited to the visible range and uses neither ultraviolet nor microscope as taught by the Applicant.

2. 4,899,055 is specifically directed to semiconductor thin film thicknesses and both describes and claims the illumination of the specimen with ultraviolet light and narrow band detector at fixed wavelengths, preferably 253.6nm. and computing thickness by comparing it with a film of known reflectivity. The Applicant herein describes a system which employs a light source that covers a wide band of wavelengths in the ultraviolet range, scanned with a monochromator and a wide range photomultiplier detector which determines and stores system efficiency coefficients for use with all UV wavelengths to compute absolute reflectance.

3. 5,101,111 entitled "Method of Measuring Thickness of Film With a Reference Sample Having a Known Reflectance" contains two claims drawn to a method for measuring a thin film, but the specifications appear to describe the measuring of reflectance using visible white light, not UV as claimed by Applicant. This patent was filed in U.S. on July 6, 1990, five months after the Applicant's filing date, and had a Japanese priority date of July 1989.

4. 5,120,966 entitled "Method and Apparatus for Measuring Film Thickness" contains three claims drawn only to a method for measuring film thickness, but the specification also appears to describe the measuring of absolute reflectance in the UV range. This patent was filed in U.S. on Feb. 6, 1991, one year after the Applicant's filing date, and had a Japanese priority date of July 1988. The present application distinguishes over this reference by naming a known reference material with desirable optical characteristics, an example of which is single crystal silicon. The applicant's system utilizes a reflecting microscope which has an optical path containing only reflective focussing or imaging elements. The cited text shows use of a non-reflective focussing element 30 in the illumination path. This results in chromatic aberration and, therefore, different focuses for different wavelengths throughout the ultraviolet range.

5. This reference text written by Dr. Horst Piller of Carl Zeiss Co. in Oberkochen, Germany, generally covers photometry defined as being restricted to radiation in the visible region of the spectrum as opposed to radiometry which deals with radiant energy of any wavelength. In the text, Dr. Piller mentions the relationship between a specimen and reference measured values to those of an "interaction factor" which he very generally describes as "transmittance, reflectance, fluorescent intensity, interference function, etc." The text does not suggest measurements in the ultraviolet range.